



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/747,968	12/29/2003	Hamid Ould-Brahim	42871-0020	9917
23577	7590	10/05/2007		
RIDOUT & MAYBEE SUITE 2400 ONE QUEEN STREET EAST TORONTO, ON M5C3B1 CANADA			EXAMINER JUNTIMA, NITTAYA	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 10/05/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/747,968	OULD-BRAHIM, HAMID	
	<b>Examiner</b>	<b>Art Unit</b>	
	Nittaya Juntima	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 8-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/1/04, 6/13/05</u>   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because in Fig. 1, items 14, 20, 24, 30, 28, 34, 36, 40, and 18 need descriptive text labels to make the figure more understandable for future search. For example, item 14 should include text label "VPN."

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claims 3 and 19 are objected to because of the following informalities:

- in claims 3 and 19, line 2, "discovery" should be changed to "discoveries."

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 7 and 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by an art of record, Casey (US 2003/0142674 A1).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 7, Casey teaches a method for distributing layer-2 VPN information comprising the steps of:

Using BGP sessions and a discovery mechanism of a layer-1 provider edge device to distribute received layer-2 VPN information to a remote layer-1 provider edge device (as shown in Fig. 3, BGP sessions and a discovery mechanism of a layer-1 provider edge device such as Core-PE 110 must be established in order for layer-2 VPN information to be transmitted from

Art Unit: 2616

Core-PE 110 to Core-PE 114 when site#1 of customer A communicates with site# 2 of customer A, paragraphs 0023-0026, 0031, 0033-0037, 0056-0059).

Passing said layer-2 VPN information from said remote layer-1 provider edge device (Core-PE 114) to an attached layer-2 provider edge device (Edge-PE 126). See Fig. 3.

Wherein a discovery mechanism of said layer-1 provider edge device simplifies operations for a layer-2 service provider (provider of layer-2 network which includes Edge-PEs 120, 124, and 126 and SETs 180, 184, and 186) (the auto-discovery of layer-1 provider edge device enables layer-2 information to be transmitted through the core network, see Fig. 3 and paragraphs 0056-0059).

Regarding claim 15, as shown in Fig. 3, Casey teaches a network comprising:

A backbone (core 100).

At least two provider edge devices (Core-PEs 110, 112, and 114) connected to and working with said backbone.

Layer-1 and layer-2 VPN information processed by one of said at least two provider edge devices (layer-1 VPN information reads on VPLS peer group determined during auto-discovery, paragraphs 0056-0057, and layer-2 VPN information reads on data which site#1 of customer A communicates with site# 2 of customer A, paragraphs 0023-0026, 0031, 0033-0037, both VPN information must be processed at Core-PEs 110 to allow site#1 of customer A to communicate with site# 2 of customer A).

Wherein said one (Core-PEs 110) of the at least two provider edge devices has a discovery mechanism for distributing said layer-2 VPN information (the auto-discovery of layer-

Art Unit: 2616

1 provider edge device enables layer-2 information to be transmitted through the core network, see Fig. 3 and paragraphs 0056-0059).

Regarding claim 16, it is inherent in Casey that said at least two provider edge devices (Core-PEs 110, 112, and 114 in Fig. 3) must be GVPN-based.

Regarding claim 17, as shown in Fig. 3, Casey teaches that said at least two provider edge devices (Core-PEs 110, 112, and 114 in Fig. 3) are a part of a network of a first service provider (service provider that operates a network which includes Core-PEs 110, 112, and 114 and core 100 in Fig. 3).

Regarding claim 18, as shown in Fig. 3, Casey teaches a second service provider having its own network (service provider that operates a network which includes SETs 130, 184, 186 and Edge-PEs 120, 124, and 126), said second service provider being a customer of said first service provider (SETs 130, 184, 186 and Edge-PEs 120, 124, and 126 must access core network 100 in order to communicate to one another).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6 and 19-20 are provisionally rejected under 35 U.S.C. 103(a) as being obvious over copending Application No. 10/265,621 which is an art of record, Casey (US 2003/0142674 A1) and has a common assignee with the instant application in view of another art of record, “*BGP/MPLS VPNs*” by E. Rosen (hereinafter “Rosen”).

Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e) if published or patented. This provisional rejection under 35 U.S.C. 103(a) is based upon a presumption of future publication or patenting of the conflicting application. This provisional rejection might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention “by another,” or by a showing of a date of invention for the instant application prior to the effective U.S. filing date of the copending application under 37 CFR 1.131. This rejection might also be overcome by showing that the copending application is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Regarding claim 2, as shown in Fig. 1, Casey teaches a network comprising:

A first carrier network employed by a layer-1 VPN service provider (Core PEs 110, 112, 114 and MPLS Core 100 constitute a first carrier network which must be employed by a layer-1 VPN service provider, paragraphs 0025-0029)).

Layer-1 VPN information created within said first carrier network (VPLS peer group information such as IP addresses of Core-PEs is determined by auto-discovery within the core network, paragraphs 0056-0057).

A second carrier network employed by a different service provider (SETs 130, 184, 186, and Edge PEs 120, 124, 126 constitute a second carrier network which must be employed by different service provider at layer-2, paragraphs 0025-0029).

A layer-2 VPN information created within said second carrier network (a layer-2 VPN information reads on a set of addresses which are at the SETs 130, 184, 186 and Edge PEs 120, 124, 126 sites, paragraphs 0023, 0032, 0059).

However, Casey does not explicitly teach a BGP session for transmitting said layer-2 VPN information from said second carrier to said first carrier network.

In an analogous network in which PEs (equivalent to Core PEs in layer-1 VPN) learn routes from CEs (equivalent to Edge PEs in layer-2 VPN), Rosen teaches that a BGP session is used for transmitting the set of address prefixes at CE router's site or attributes of routes from CE to PE (equivalent to transmitting layer-2 VPN information from a second carrier network to a first carrier network). See pages 16-18.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the teaching of Casey to incorporate the concept of using a BGP to transmit information between two different levels of edge routers such that a BGP session would be used for transmitting said layer-2 VPN information from said second carrier to said first carrier network as claimed. The suggestion/motivation to do so would have been to pass routing information between systems run by different administrations using BGP as suggested by Rosen (page 17, item 4b).

Regarding claims 2-3, and 19, Casey teaches that layer-1 VPN auto-discovery is carried out within said first carrier network (paragraph 0057), however, the combined teaching of Casey and Rosen does not explicitly teach that an auto-discovery mechanism for said second carrier



Art Unit: 2616

network is outsourced to said first carrier network and layer-2 VPN auto-discovery is also carried out within said first carrier network.

However, similar to layer-1 VPN auto-discovery, an official notice is taken that it is well known in the art to use layer-2 VPN auto-discovery mechanism for a carrier network to enable network devices to learn about VPN routing information and one another.

Therefore, based on the connectivity of customer A as shown in Fig. 2 of Casey which has three sites physically connected to three different SETs and Edge-PEs in a distributed manner (all of which constitute the second carrier network) through a core network 100 belonging to first carrier network, it would have then been obvious to one skilled in the art at the time invention was made to carry out (equivalent to outsourcing since detail implementation of the outsourcing is not defined) an auto-discovery mechanism for said second carrier network through said first carrier network. The suggestion/motivation to do so would have been to enable different SETs and Edge-PEs that are physically connected to one another through first carrier network in a distributed manner to learn about VPN routing information and one another.

Regarding claim 4, as shown in Fig. 2, Casey teaches that said first carrier network includes at least two provider edge devices (110, 112, and 114), and a backbone separates said at least two provider edge devices.

Regarding claims 5 and 20, as shown in Fig. 2, Casey teaches that said at least two provider edge devices are layer-1, and said backbone (MPLS 100, paragraph 0024). However, the combined teaching of Casey and Rosen does not explicitly teach that the backbone includes a

Art Unit: 2616

portion of the Internet. However, an official notice is taken that it is well known in the art that a core MPLS may include a portion of Internet to provide data transmission at a minimum cost since both MPLS and Internet commonly use IP protocol for data transmission. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to further modify the combined teaching of Casey and Rosen such that the backbone would include a portion of the Internet in order to provide data transmission at a minimum cost.

Regarding claim 6, as shown in Fig. 2, Casey teaches that said second carrier network includes a provider edge device (Edge-PE 120 must be layer-2 in order to communicate with SET 130) that is a layer-2 VPN-based provider edge device (see paragraphs 0023 and 0025).

#### ***Allowable Subject Matter***

7. Claims 8-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

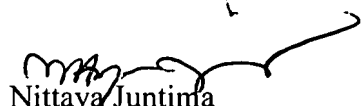
#### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nittaya Juntima whose telephone number is 571-272-3120. The examiner can normally be reached on Monday through Friday, 8:00 A.M - 5:00 P.M.

Art Unit: 2616

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Nittaya Juntima  
Patent Examiner, AU 2616  
September 28, 2007